

**Australian/New Zealand
Certification Scheme for
EXPLOSION-PROTECTED ELECTRICAL EQUIPMENT
ANZEx Scheme**

Certificate of Conformity

Certificate No: **ANZEx 16.4148X** Issue No.: **0** Date of Issue: **2016-04-01**

Certificate Holder: Solexy SRL
via Enrico Fermi, 2
25015 Desenzano del Garda (BS)
Italy

Electrical Apparatus: Antenna Coupler RX Series

Type of Protection: Ex db, Ex [ia], Ex mb, Ex tb

Marking Code: Ex db mb [ia Ma] I Mb
Ex db mb [ia Ga] IIA/IIB/IIC T5/T6 Gb
Ex mb tb [ia Da] IIIC T100°C/T80°C Db
T5: $-40^{\circ}\text{C} \leq T_a \leq +85^{\circ}\text{C}$
T6: $-40^{\circ}\text{C} \leq T_a \leq +70^{\circ}\text{C}$
ANZEx 16.4148X

Manufacturing Location(s): Solexy SRL
via Enrico Fermi, 2
25015 Desenzano del Garda (BS)
Italy

 <p>TÜVRheinland[®]</p> <hr/> <p>Genau. Richtig.</p> <p>ABN 75 124 175 953</p>	<p>Certificate issued by</p> <p>TÜV Rheinland Australia Pty Ltd.</p> <p>30 Kennington Drive, Tomago, NSW 2322 Australia</p> <p>Phone: +61 2 4964 5800</p> <p>Email: info@au.tuv.com</p> <p>Web: www.tuv.com.au</p>	 <p>Accreditation by the Joint Accreditation System of Australia and New Zealand Acc No. Z2870404AA</p> <p>www.jaz-anz.com.au</p>
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*This certificate is granted subject to the conditions as set out in Standards Australia/Standards New Zealand Miscellaneous Publication **MP87.1:2008**.*

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0: 2011	Explosive atmospheres. Part 0: Equipment - General requirements
IEC 60079-1: 2014-06	Explosive atmospheres. Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-11: 2011	Explosive atmospheres. Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-18 : 2014	Explosive atmospheres. Part 18: Equipment protection by encapsulation "m"
IEC 60079-31 : 2013	Explosive atmospheres. Part 31: Equipment dust ignition protection by enclosure "t"

This Certificate does not indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

The equipment listed has successfully met the examination and test requirements as recorded in:

Test Report No. and Issuing Body: **HR/EXA/ExTR15.0015/00**
AU/ITA/ExTR15.0050/00

Quality Assessment Report No. and Issuing Body: **HR/EXA/QAR14.0001/01**

File Reference: **Job 1113008463**

Signed for and on behalf of issuing body:

James Bes



2016-04-01

Certification Authority

Date of Issue

This certificate is not transferable and remains the property of the issuing body and must be returned in the event of it being revoked or not renewed.

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This certificate uses TUVRA Template number QMA-HAE-08-720 (2015-10-26)

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Schedule

EQUIPMENT:

The Solexy RX series Antenna Coupler permits the installation of non-Ex certified radio antenna in hazardous area. It acts as capacitive coupling between an RF transmitter/receiver installed in a flameproof enclosure (or in the safe area) and a passive antenna installed in the potentially explosive atmosphere. Connection to the antenna is facilitated by a direct fitting to the antenna coupler socket or through cable connection. The Antenna Coupler also acts as a flameproof plug suitable to be mounted to the cable entry of a flameproof enclosure. The antenna coupler blocks DC signals and provides very high impedance to low frequency AC signals, and consists of a circuit board housed and encapsulated in an explosion proof stainless steel housing. . If a radio transmitter/receiver is installed in a safe area, the Antenna Coupler protects the output signal using a cable connected to an antenna that is installed in hazardous area.

Type designation coding

	XXX 1	X 2	X 3	XX 4	XX 5	X 6	XX 7
<hr/>							
1 Coupler Series	RXF	RP-SMA female antenna connection					
	RXN	N female antenna connection					
	RXB	BNC female antenna connection					
	RXT	TNC female antenna connection					
	RXS	SMA female antenna connection					
<hr/>							
2 Threading	M	M25x1.5					
	3	3/4 npt-m					
<hr/>							
3 Material	S	AISI 303					
	C	AISI 316					
	L	AISI 316L					
<hr/>							
4 Coaxial/Radio connector	xx	2 digit for coax connector assembled on coax cable					
<hr/>							
5 Coaxial cable length	xx	2 digit for coaxial cable length (in inches) <i>(00 for double connector execution)</i>					
<hr/>							
6 Version (Frequency Range)	x	1 digit for version (J,L,R are common optimized Codes as defined in the following tables and product brochures)					
<hr/>							
7 Certification marking	X0	ATEX / IECEx / ANZEx					
	XN	ATEX / IECEx / UL-CSA / ANZEx					

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CONDITIONS OF CERTIFICATION:

1. Maximum input voltage: $U_m = 250 \text{ VAC (50 Hz/60 Hz) or } 250 \text{ VDC}$.
2. The equipment is intended to be used in an ambient temperature range according to the following table:

Gas	Dust	Ta
Group I/T5	T100°C	$-40^\circ\text{C} \leq T_a \leq 85^\circ\text{C}$
T6	T80°C	$-40^\circ\text{C} \leq T_a \leq 70^\circ\text{C}$
3. Maximum input RF frequency: 6 GHz and maximum input RF power as provided in Tables 2, 3, 4, 5, connected to RF source with minimum internal impedance of 50Ω .
4. Solexy RX series antenna coupler does not provide any RF power limitation.
5. The RX series antenna coupler is designed to be used with a suitable enclosure with mechanical protection of the input side that utilizes one of the protection types listed in Clause 1 of AS/NZS/IEC60079-0 when it is installed in an Ex area. The protection type utilized shall be applicable to the specific area of use (i.e. Gas or Dust).
6. When installed in a safe area the input side must be protected from sun exposure. For example by using a housing or by being in an indoor area..

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7. MAXIMUM RADIO OUTPUT POWER

The tables below provide the maximum allowable RF power that may be input to the RX coupler. The tables do not consider any cable loss between the RF transmitter and the RX coupler and may therefore be considered as the maximum allowable RF transmitter output power when the RX coupler is directly connected to a RF transmitter.

- It must not be possible for an end-user to adjust the RF transmitter output power by software control or any other means if the maximum adjustable power exceeds those values in the tables below.
- The maximum permissible radio output power is determined by the equipment group the device will be operating, radio operating frequency and model frequency code of RX series coupler.
- These are the maximum powers that may be supplied to the RX series antenna coupler without exceeding intrinsically safe conditions. For frequencies between table values, use next highest table frequency value (i.e. for 960MHz, use table values for 1000MHz).
- Added cable loss between the RF transmitter and the RX coupler may allow the RF transmitter output power to exceed the values in the table as long as the cable loss ensures the power at the input of the RX coupler is less than or equal to the values provided in the tables below

Table 2

Group I and IIIC

		Radio Power, mW(dBm)												
		Code	H	J	K	L	M	N	O	P	Q	R	S	T
Maximum Frequency [MHz]	100	3753 (35,7)	3892 (35,9)	4004 (36,0)	4147 (36,1)	4410 (36,4)	4560 (36,5)	4743 (36,7)	5120 (37,0)	5445 (37,3)	5644 (37,5)			
	200	3699 (35,6)	3726 (35,7)	3753 (35,7)	3808 (35,8)	3864 (35,8)	3920 (35,9)	4032 (36,0)	4205 (36,2)	4500 (36,5)	4620 (36,6)	4743 (36,7)		
	300	3672 (35,6)	3699 (35,6)	3726 (35,7)	3726 (35,7)	3753 (35,7)	3781 (35,7)	3836 (35,8)	3920 (35,9)	4032 (36,0)	4089 (36,1)			
	400	3591 (35,5)												
	500	3225 (35,0)												
	600	2904 (34,6)												
	700	2645 (34,2)												
	800	2420 (33,8)												
	900	2247 (33,5)												
	1000	2080 (33,1)												
	1100	1960 (32,9)												
	1200	1824 (32,6)												
	1300	1729 (32,3)												
	1400	1638 (32,1)												
	1500	1548 (31,8)												
	1600	1462 (31,6)												
	1700	1394 (31,4)												
	1800	1344 (31,2)												
	1900	1280 (31,0)												
	2000	1232 (30,9)												
2100	1185 (30,7)													
2200	1140 (30,5)													
2300	1095 (30,3)													
2400	1051 (30,2)													
2500	1022 (30,0)													
2600	980 (29,9)													

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2700	952 (29,7)
2800	924 (29,6)
2900	897 (29,5)
3000	871 (29,4)
3250	649 (28,1)
3500	520 (27,1)
3750	432 (26,3)
4000	369 (25,6)
4250	328 (25,1)
4500	288 (24,5)
4750	259 (24,1)
5000	238 (23,7)
5250	217 (23,3)
5500	198 (22,9)
5750	186 (22,6)
6000	174 (22,4)

Table 3

Group IIA

		Radio Power, mW(dBm)											
Code		H	J	K	L	M	N	O	P	Q	R	S	T
Maximum Frequency [MHz]	100	3251 (35,1)	3328 (35,2)	3380 (35,2)	3484 (35,4)	3618 (35,5)	3753 (35,7)	4004 (36,0)	4321 (36,3)	4681 (36,7)	5120 (37,0)	5644 (37,5)	
	200	3200 (35,0)	3225 (35,0)	3251 (35,1)	3276 (35,1)	3302 (35,1)	3328 (35,2)	3406 (35,3)	3511 (35,4)	3672 (35,6)	3864 (35,8)	4176 (36,2)	4470 (36,5)
	300	3200 (35,0)		3225 (35,0)		3251 (35,1)		3276 (35,1)	3328 (35,2)	3406 (35,3)	3511 (35,4)	3672 (35,6)	3864 (35,8)
	400	3200 (35,0)				3225 (35,0)		3251 (35,1)	3276 (35,1)	3302 (35,1)	3354 (35,2)	3458 (35,3)	3591 (35,5)
	500	3200 (35,0)						3225 (35,0)					
	600	2904 (34,6)											
	700	2645 (34,2)											
	800	2420 (33,8)											
	900	2247 (33,5)											
	1000	2080 (33,1)											
	1100	1960 (32,9)											
	1200	1824 (32,6)											
	1300	1729 (32,3)											
	1400	1638 (32,1)											
	1500	1548 (31,8)											
	1600	1462 (31,6)											
	1700	1394 (31,4)											
	1800	1344 (31,2)											
	1900	1280 (31,0)											
	2000	1232 (30,9)											
	2100	1185 (30,7)											
	2200	1140 (30,5)											
	2300	1095 (30,3)											

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2400	1051 (30,2)
2500	1022 (30,0)
2600	980 (29,9)
2700	952 (29,7)
2800	924 (29,6)
2900	897 (29,5)
3000	871 (29,4)
3250	649 (28,1)
3500	520 (27,1)
3750	432 (26,3)
4000	369 (25,6)
4250	328 (25,1)
4500	288 (24,5)
4750	259 (24,1)
5000	238 (23,7)
5250	217 (23,3)
5500	198 (22,9)
5750	186 (22,6)
6000	174 (22,4)

Table 4

Group IIB

		Radio Power, mW(dBm)												
		Code	H	J	K	L	M	N	O	P	Q	R	S	T
Maximum Frequency [MHz]	100	2761 (34,4)	2832 (34,5)	2904 (34,6)	2976 (34,7)	3075 (34,8)	3200 (35,0)	3380 (35,2)	3500 (35,4)					
	200	2737 (34,3)	2761 (34,4)	2784 (34,4)		2808 (34,4)	2856 (34,5)	2904 (34,6)	3001 (34,7)	3125 (34,9)	3276 (35,1)	3500 (35,4)		
	300	2737 (34,3)		2761 (34,4)			2784 (34,4)	2808 (34,4)	2856 (34,5)	2904 (34,6)	2976 (34,7)	3125 (34,9)	3276 (35,1)	
	400	2737 (34,3)				2761 (34,4)		2784 (34,4)	2808 (34,4)	2832 (34,5)	2880 (34,5)	2952 (34,7)	3050 (34,8)	
	500	2737 (34,3)					2761 (34,4)		2784 (34,4)	2808 (34,4)	2832 (34,5)	2880 (34,5)	2952 (34,7)	
	600	2737 (34,3)						2761 (34,4)		2784 (34,4)	2808 (34,4)	2832 (34,5)	2880 (34,5)	
	700	2645 (34,2)												
	800	2420 (33,8)												
	900	2247 (33,5)												
	1000	2080 (33,1)												
	1100	1960 (32,9)												
	1200	1824 (32,6)												
	1300	1729 (32,3)												
	1400	1638 (32,1)												
	1500	1548 (31,8)												
	1600	1462 (31,6)												
	1700	1394 (31,4)												
1800	1344 (31,2)													

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1900	1280 (31,0)
2000	1232 (30,9)
2100	1185 (30,7)
2200	1140 (30,5)
2300	1095 (30,3)
2400	1051 (30,2)
2500	1022 (30,0)
2600	980 (29,9)
2700	952 (29,7)
2800	924 (29,6)
2900	897 (29,5)
3000	871 (29,4)
3250	649 (28,1)
3500	520 (27,1)
3750	432 (26,3)
4000	369 (25,6)
4250	328 (25,1)
4500	288 (24,5)
4750	259 (24,1)
5000	238 (23,7)
5250	217 (23,3)
5500	198 (22,9)
5750	186 (22,6)
6000	174 (22,4)

Table 5

Group IIC

		Radio Power, mW(dBm)													
		Code	J	K	L	M	N	O	P	Q	R	S	T		
Maximum Frequency [MHz]	100	1843 (32,6)	1862 (32,6)	1901 (32,7)	1960 (32,9)	2000 (33,0)									
	200	1786 (32,5)		1805 (32,5)	1824 (32,6)	1843 (32,6)	1862 (32,6)	1920 (32,8)	1980 (32,9)	2000 (33,0)					
	300	1767 (32,4)	1786 (32,5)			1805 (32,5)	1824 (32,6)	1843 (32,6)	1862 (32,6)	1920 (32,8)	1980 (32,9)	2000 (33,0)			
	400	1767 (32,4)		1786 (32,5)				1805 (32,5)	1824 (32,6)	1862 (32,6)	1901 (32,7)	1940 (32,8)			
	500	1767 (32,4)			1786 (32,5)				1805 (32,5)	1824 (32,6)	1862 (32,6)	1881 (32,7)			
	600	1767 (32,4)					1786 (32,5)			1805 (32,5)	1824 (32,6)	1862 (32,6)			
	700	1767 (32,4)					1786 (32,5)			1805 (32,5)		1843 (32,6)			
	800	1767 (32,4)						1786 (32,5)			1805 (32,5)	1824 (32,6)			
	900	1767 (32,4)							1786 (32,5)			1805 (32,5)		1824 (32,6)	
	1000	1767 (32,4)							1786 (32,5)			1805 (32,5)		1824 (32,6)	

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			(32,5)
1100	1767 (32,4)		1786 (32,5)
1200	1767 (32,4)		1786 (32,5)
1300		1729 (32,3)	
1400		1638 (32,1)	
1500		1548 (31,8)	
1600		1462 (31,6)	
1700		1394 (31,4)	
1800		1344 (31,2)	
1900		1280 (31,0)	
2000		1232 (30,9)	
2100		1185 (30,7)	
2200		1140 (30,5)	
2300		1095 (30,3)	
2400		1051 (30,2)	
2500		1022 (30,0)	
2600		980 (29,9)	
2700		952 (29,7)	
2800		924 (29,6)	
2900		897 (29,5)	
3000		871 (29,4)	
3250		649 (28,1)	
3500		520 (27,1)	
3750		432 (26,3)	
4000		369 (25,6)	
4250		328 (25,1)	
4500		288 (24,5)	
4750		259 (24,1)	
5000		238 (23,7)	
5250		217 (23,3)	
5500		198 (22,9)	
5750		186 (22,6)	
6000		174 (22,4)	

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8. MAXIMUM PERMITTED RF THRESHOLD POWER (P_{th})

The RF threshold power, sometimes called the effective isotropic radiated power (EIRP), as defined in AS/NZS/IEC60079-0, is the product of the effective output power of a radio transmitter multiplied by the power gain of a connected antenna (or, when using dB, as the addition of the RF radio output power and the power gain of a connected antenna). The maximum threshold powers for each equipment group as defined by Table 4 in AS/NZS/IEC60079-0 are provided below.

Table 6

Equipment for	Max Threshold power
Group I	6W (37,78 dBm)
Group IIA	6W (37,78 dBm)
Group IIB	3,5W (35,44 dBm)
Group IIC	2W (33,01 dBm)
Group III	6W (37,78 dBm)

The maximum allowable antenna gain shall be calculated using following formula:

$$\text{Antenna gain (dBi)} = \text{Max threshold power (dBm)} - \text{RF radio output power (dBm)} + \text{Coax cable loss (dB)}^*$$

*when used for antenna connection to Solexy Antenna Coupler

In case of device with multiple antennas, each antenna gain shall be calculated according to above formula.

For maximum allowable RF radio output power (Table 2 to Table 5), if RF transmitter frequency is between values in table, use next higher value.

For antenna coupler selection with the installation group following table shall be considered:

Table 7

Antenna coupler type	Group
RX____H_	I, IIA, IIB, IIIA, IIIB, IIIC
RX____J_	I, IIA, IIB, IIC, IIIA, IIIB, IIIC
RX____K_	I, IIA, IIB, IIC, IIIA, IIIB, IIIC
RX____L_	I, IIA, IIB, IIC, IIIA, IIIB, IIIC
RX____M_	I, IIA, IIB, IIC, IIIA, IIIB, IIIC
RX____N_	I, IIA, IIB, IIC, IIIA, IIIB, IIIC
RX____O_	I, IIA, IIB, IIC, IIIA, IIIB, IIIC
RX____P_	I, IIA, IIB, IIC, IIIA, IIIB, IIIC
RX____Q_	I, IIA, IIB, IIC, IIIA, IIIB, IIIC
RX____R_	I, IIA, IIB, IIC, IIIA, IIIB, IIIC
RX____S_	I, IIA, IIB, IIC, IIIA, IIIB, IIIC
RX____T_	I, IIA, IIB, IIC, IIIA, IIIB, IIIC

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9. The antenna is not part of this certificate. It must be considered for its material, electrostatic hazard and dielectric strength test.

Drawings Associated with the Issue 0 of this Certificate:

Document Title	Document No.	Rev	Date
RX Series Antenna Coupler Execution (14 Pages)	PD00050	00	2015-07-20
Capacitive Barrier Maximum Allowable Radio Output Power (29 Pages)	AN00002	06	2015
Assembly, Model RXN/RXT/RXB Explosion proof Antenna Fitting – ATEX / IECEX (1 page)	DA00148	00	2014-11-20
Assembly, Model RXF/RXS Explosion proof Antenna Fitting – ATEX / IECEX (1 page)	DA00149	00	2014-11-20
Dimensional drawing RXNRXT/RXB compound thicknesses – ATEX / IECEX (1 page)	DD00083	00	2014-10-24
Dimensional drawing RXF/RXS compound thicknesses –ATEX / IECEX (1 page)	DD00084	00	2014-07-15
PCB Assembly RXF/RXS – ATEX / IECEX Ex to IS antenna interface (1 page)	DE00157	00	2014-07-08
PCB Assembly RXN/RXT/RXB – ATEX / IECEX Ex to IS antenna interface(1 page)	DE00158	00	2014-07-08
ATEX / IECEX / ANZEx – RX Series Product Markings Explosion Proof Antenna Coupler (1 page)	DM00063	01	2016-03-01
Housing, Explosion Proof Antenna Fitting M25x1.5 Thread, full flats, RXF/RXS (1 page)	MM00875	00	2014-04-24
Housing, Explosion Proof Antenna Fitting ¾ -14 NPT Thread, RXF/RXS (1 page)	MM00874	00	2014-04-24
Housing, Explosion Proof Antenna Fitting M25x1.5 Thread, Full Flats, RXN/RXT/RXB (1 page)	MM00873	00	2014-04-24
Housing, Explosion Proof Antenna Fitting ¾ -14 NPT Thread, RXN/RXT/RXB (1 page)	MM00872	00	2014-04-24
Housing, Exp Proof Antenna Fitting M25x1.5 Thread, RXN/RXT/RXB (1 page)	MM00913	00	2015-08-20
Housing, Exp Proof Antenna Fitting M25x1.5 Thread, RXF/RXS (1 page)	MM00914	00	2015-08-20
Schematic, RX Series Explosion Proof Antenna Fitting (1 page)	DS00109	03	2014-10-06
Related Drawing, RX Series EXP. Proof Antenna Fitting – ATEX/IECEX (1 page)	DC00074	00	2014-10-09